

Notes.

News of Capt. Roald Amundsen's Arctic Expedition has unexpectedly been received from Siberia via Alaska. The *Maud* left Norway in June, 1918, and was last heard of some months later from Dickson Island, at the mouth of the Yenisei. According to the telegram published in the *Times*, two men left the ship in October, 1918, in the vicinity of Cape Chelyuskin. Nothing has been heard of these men, although they presumably made for the fishing settlements of the Lower Yenisei, a distance of some six or seven hundred miles across the barren tundra. There seems to be little hope that the two men are alive. The *Maud* appears to have spent last winter in the neighbourhood of Aion Island, at the mouth of Chaun Bay, in north-eastern Siberia, within six hundred miles of Bering Strait. Aion Island is noted for its reindeer pasture. The coast in the vicinity is visited by native and occasional American traders in summer. The distance to the nearest wireless station at the mouth of the Anadir is about 450 miles across rough country. Until further news arrives it would be rash to suppose that Amundsen has abandoned his trans-polar drift. It is quite possible that he intends to push into the Arctic basin north of Bering Strait in order to ensure the drift taking him to a high latitude. On the other hand, the loss of two men, even supposing his messengers to the Anadir return, will seriously weaken his expedition. Capt. Amundsen always maintained that his aims were scientific, and that he had no desire merely to reach the North Pole. It is not, therefore, probable that he will return this year, since the coast of Siberia along which the *Maud* has sailed has been explored in recent years by Russian expeditions. The *Maud* is provisioned for another three years.

THE United States National Research Council has appointed a committee on eugenics, under the Division of Biology and Agriculture, consisting of the following members:—L. F. Barker, A. G. Bell, E. A. Hooton, Daniel W. LaRue, Stewart Paton, Raymond Pearl, R. M. Yerkes, H. S. Jennings, and C. B. Davenport (chairman). The committee met on Saturday, March 20, and decided to hold the second International Eugenics Congress in New York City on September 22–28, 1921, inclusive. Dr. Alexander Graham Bell was elected honorary president, Dr. Henry F. Osborn president, Mr. Madison Grant treasurer, and Mrs. Sybil Gotto, secretary of the Eugenics Education Society, in view of her activity in organising the first Eugenics Congress, was nominated honorary secretary of the second Eugenics Congress. The national consultative eugenics bodies in the various countries will be informed of the action of the eugenics committee of the National Research Council and invited to send representatives. A general invitation will be sent to universities in different American countries and in the countries of Europe.

THE president, vice-president, and council of the Royal College of Surgeons in Ireland have elected Prof. G. Elliot Smith to the Mary Louisa Prentice Montgomery lectureship in ophthalmology. The sub-

ject of Prof. Smith's first lecture will be "The Influence of Stereoscopic Vision on the Evolution of Man." The lecture will be delivered in October next.

AN extraordinary general meeting of the fellows of the Chemical Society will be held at Burlington House on Thursday, April 29, at 5 p.m., to consider the alterations in the by-laws proposed by the council.

THE reorganisation and co-operation of research departments contemplated at the Middlesex Hospital promise to be of great value. In particular the co-operation of such distinguished investigators as Profs. Swale Vincent and McIntosh with Prof. Russ and Dr. Lazarus-Barlow may be expected to direct the investigations of cancer on the broad and general lines so necessary at the present time in this subject. We wish the new arrangements every success.

THE Report of the Salisbury Public Library for 1919–20 describes the arrangements for advancing adult education by means of a series of public lectures. A course of eight lectures was delivered by Mr. F. Stevens on the history of the neighbourhood at various periods. The lectures fell into two groups of four each, prehistoric and early historic, and were illustrated from the collections in the city museum by an inspection of the actual objects and by some five hundred photographs. The course, of which a syllabus is appended, attracted good audiences, and was so financially successful that a substantial balance remains, which is being expended in strengthening the existing collection in the library of books on Wiltshire. The committee may be congratulated on this result, and other public libraries throughout the country may use the report as a suggestion for similar arrangements.

DR. FELIX OSWALD and Mr. T. D. Price announce for publication at an early date a book entitled "An Introduction to the Study of Terra Sigillata, Treated from a Chronological Standpoint." During their excavations at the Roman station of Margidunum, in Nottinghamshire, the authors were impressed by the difficulties inherent in the study of Terra Sigillata, the so-called Samian ware, and especially by the necessity for collecting the many scattered references to the subject in many languages besides English. The importance of the study lies in the historical evidence furnished by this ware, for, apart from inscriptions, no relic of the Imperial age is more important for chronological purposes. Ample materials for the investigation are provided at sites such as Haltern, Hofheim, Newstead, and Niederbieber, which can be dated by historical evidence and from the names of the potters inscribed on their work. As the Gaulish Sigillata is a development of the Italian or Arretine fabric, a short account of this is supplied. The book promises to be valuable for the study of the Roman period in Western Europe.

IN an account of the Apalai Indians of the Amazon (*Museum Journal*, vol. x., No. 3, September, 1919) Mr. W. C. Farabee describes a remarkable form of puberty ordeal. A frame in the shape of a jaguar, possibly an indication of totemism, is made of wicker-

work, and about a hundred wasps or ants are passed through the interstices. The youths, exhausted by a dance which is kept up all day, present themselves before the medicine-man, who applies the wasp-frame to their chests, backs, arms, and legs. Those who scream or show signs of suffering when they are stung are not allowed to continue the ordeal. Those who pass the test are invested with a headdress and flute, and deemed fit for marriage. But more than this is required. The youth must give proof that he is able to support a family by passing the target test of throwing cassava pellets at a circle drawn on a piece of wood, and of shooting arrows from a rapidly moving boat. Girls undergo the ordeal of fasting in seclusion, and their bodies are scarified with the sharp teeth of an animal or fish. They are then dressed in aprons, and use charms to stimulate affection in courtship, in which they take the initiative.

DR. A. M. BLACKMAN discusses in the *Journal of the Manchester Egyptian and Oriental Society* for 1918-19, recently issued, "The House of the Morning" in Egyptian ritual. The Heliopolitan sun-god Re-Atum was represented by his priests as re-born every morning as the result of his undergoing lustration, which was supposed to be performed by the sun-god himself, assisted by other divinities. The king of Heliopolis, high priest of the sun-god, was regarded as his son and embodiment. The lustral washing of the king-priest took place before he officiated in the sun temple, and as a result of it he was thought to be re-born like his divine prototype. His purification was completed by fumigating him with incense and presenting him with balls of natron to chew. "By being washed or sprinkled with holy water and fumigated with incense, and by the chewing of natron, the king was mysteriously re-born, brought into contact with divinities, and imbued with their unearthly qualities, and his mouth made fit to chant the sun-god's praises and recite the formulæ which accompanied the enactment of the various episodes composing the daily service in the sun temple."

It is well known that in ancient India, as described in the *Institutions of Manu*, the law-giver, marriage was permitted between members of different castes—a system which was forbidden by later Brahmanical legislation. Mr. Patel, one of the advanced Indian members of the Viceroy's Council, recently introduced a Bill providing that marriages between Hindus of different castes shall be valid. More conservative members opposed the Bill on the grounds that it would undermine the present social system, and that it was opposed to Hindu custom, the potent force which controls Hindu society. It was also pointed out that the enactment of such a law raised the wide questions connected with succession, adoption, and legitimacy, for which no legislation was provided in the Bill. The Government representative, Sir W. Vincent, adopted a neutral attitude, admitting that the question should be decided by public opinion carefully devoted to its consideration. If the Bill is finally passed it will be a serious blow to caste, but it is

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significant of the general feeling that the Moham-medan members refused to sit on the Special Committee appointed to consider it on the grounds that the question was one for Hindus, and that the latter had been obstructive on the grant of communal representation for Dacca University.

THE history of science is rapidly acquiring its own periodical literature. Dr. Sarton in a recent issue of *Isis* set forth a bibliography of reviews and collections on this subject, of which he recognised sixty-two. Most of these deal with special sciences, among which mathematics and medicine take first place. Several journals are, however, devoted to the history of science as a whole. The earliest was the *Archiv für Geschichte der Naturwissenschaften*, which has appeared since 1908. Next came *Isis*, the publication of which was interrupted by the war; it has now recommenced, and will in future be in English and under the joint editorship of Dr. Sarton and Dr. Singer. The Italians have now also started a quarterly, *Archivio di Storia della Scienza*. It is edited by Prof. Aldo Mieli, who has long devoted himself exclusively to the history of science, and has printed the first volume of a monumental work on the subject. It is encouraging to historians of science that his enthusiasm has overcome the economic and social difficulties that prevail in his country, and that the publication of the *Archivio*, begun in March, 1919, is now being continued. In addition to original articles on every aspect of the history of science, it will contain reviews, a bibliography of Italian works on the subject, and notices on activities in connection with it, which are very pronounced in Italian universities. The annual subscription to the *Archivio* is 35 lire, and it should be sent to Attilio Nardecchia, Via dell' Umiltà 14, Roma 19. Information concerning *Isis* can be had from Dr. George Sarton, Carnegie Institution, Washington, D.C., U.S.A., or from Dr. Charles Singer, Westbury Lodge, Norham Road, Oxford.

MISSSES BLACKLOCK and Carter contribute to the *Annals of Tropical Medicine and Parasitology* (vol. xiii., No. 4, March, 1920) papers on a mosquito, *Anopheles plumbeus*. The bionomics of this species are probably less known than those of any European Anopheline mosquito. The species is widely distributed, being met with in the British Isles, in nearly all European countries, and in the Western Himalayas, and is essentially a tree-hole breeder. Experimental evidence is produced for the first time that *A. plumbeus* is capable of becoming infected with a malaria parasite, and may therefore transmit malaria.

A SUGGESTIVE review of the pathology and symptomatology of beri-beri is contributed by Dr. F. M. R. Walshe to *Medical Science: Abstracts and Reviews* (vol. ii., No. 1, April, 1920). The current hypothesis of the nature of beri-beri (a disease particularly of the East characterised by the development of neuritis) is that it is a "deficiency disease," due to the lack of certain elements or "vitamines" from the food. Dr. Walshe points out that the neuritis of beri-beri is similar to that produced by certain poisons, such as

alcohol and the diphtheria poison, and that neurologically we are dealing with no negative or defect disease, but with a definite, positive reaction of the nervous system to some unknown poison. "We know nothing of what happens in the body from the eating of a vitamine-free diet to the moment when the symptoms of beri-beri appear, and we cannot exclude the possibility that such a poison has been produced in the body." Dr. Walshe seems to agree with Eijkman that the ultimate cause of beri-beri may yet prove to be a nerve poison produced by a disordered metabolism arising out of vitamine deprivation.

A "FLORA of the District of Columbia and Vicinity," by A. S. Hitchcock and P. C. Standley, with the assistance of other Washington botanists, has been issued as vol. xxi. of Contributions from the United States National Herbarium (329 pp., 42 plates). It will replace Lester Ward's "Guide to the Flora of Washington and Vicinity," published in 1881, to which there have been six supplements. The area included is approximately a circle of fifteen miles radius, with the Capitol as the centre. The list includes all indigenous plants and all introduced ones that have become established; chance introductions are mentioned in notes appended to an allied species or genus. It is interesting to note that parts of this area are still almost wholly unexplored botanically, and the publication of the flora will afford an excellent opportunity for local botanists to supply the gaps. The arrangement is in the form of keys to the families, genera, and species, which have been carefully worked out, and also tested in the field during one collecting season; and the text is clear. An effort has been made to use common words so far as possible as substitutes for technical terms, and so-called popular names are provided for most species in the manner familiar to British botanists in Bentham's "Handbook." The Old World botanist will find some familiar plants hidden under strange names, as, for instance, *Dicentra* and *Negundo* (box-elder), which appear as *Bikukulla* and *Rulac*. The plates are a series of good photographic reproductions of aspects of the vegetation and of some of the commoner species. Unfortunately, the size of the book, large octavo, militates against its use as a pocket companion for the field botanist.

MR. J. F. N. GREEN (Proc. Geol. Assoc., vol. xxx., p. 153, 1919) has treated in his presidential address to the Geologists' Association the vulcanicity of the Lake District from a natural history point of view. He illustrates the use of petrographic details as a means of realising the conditions of intrusion and eruption, as when he pictures the scoria-cones of Borrowdale age rising above the sea and contributing their materials to the sediments by ordinary processes of erosion. He urges that the chemical analysis of an igneous rock is by itself of little value, since it cannot take into account the evanescent constituents of the magma.

FORAMINIFERA as a group always have their fascination owing to their irresolvable simplicity of organic structure and their apparent powers of selection in the up-building of their coverings. Mr. J. A. Cush-

man (Proc. U.S. Nat. Museum, vol. lvi., p. 593, 1919) describes "Recent Foraminifera from off New Zealand," including a new species of *Technitella*, a genus that forms its test of neatly arranged acicular sponge-spicules. In Bulletin 676 of the U.S. Geological Survey the same author describes Pliocene and Miocene species from the coastal plain of the United States, and shows how they help to indicate former marine climatic conditions. Mr. Cushman's wide knowledge of recent Atlantic forms renders even brief notes of this kind suggestive to the geologist.

REFERENCE has been made in NATURE (vol. xcv., p. 216) to the replacement of quartz by pyrite. A very remarkable case is now put forward by Mr. W. H. Collins in the Summary Report of the Canadian Geological Survey for 1918 (part E, p. 20, 1919) from the Michipicoten district of Ontario. The basement beds of stratified sands and gravels belonging to the Pleistocene drift, and resting on the Keewatin iron-bearing series, have apparently been replaced by "snow-white granular silica" (presumably quartz) with a deposit of loose pyrite grains below resembling ordinary sand, and sometimes 5 ft. thick. Mr. Carus-Wilson, it may be remembered, has cited a case of the replacement by pyrite of the carbonaceous cement of an Eocene sandstone (NATURE, vol. lxxviii., p. 436); but in the Canadian instance the sand-grains themselves have disappeared under the influence of solutions draining along the unconformable junction from the adjacent iron range.

THE Summary Report of the Mines Branch of the Department of Mines of Canada for the year 1918 has just been issued, and contains an interesting record of the year's activities. The fuel-testing station has been engaged, in addition to its regular routine work, upon an investigation on the carbonisation and briquetting of lignite, which promises to yield important results, as also does a test of New Brunswick oil shale in a novel type of retort—the Wallace retort. The methods adopted in Canada may be studied with advantage by those engaged in the study of carbonisation problems in this country. Good work is also being done in the ore-dressing division; until the middle of the year this had been engaged on the production of molybdenite concentrates on a working scale in view of the Empire's requirements of ferro-molybdenum for war purposes; afterwards, however, the normal working of the division was resumed and a variety of ores was tested and reported upon, the methods used being not only the ordinary wet-dressing methods, but also flotation (in a Callow cell), magnetic separation, electrostatic separation, and cyanidation. The Mines Branch may fairly be congratulated upon an excellent year's work, which must form a powerful factor in the development of the mineral resources of the Dominion.

In the March issue of the *Decimal Educator*, a quarterly publication of the Decimal Association, there is an interesting historical account of the International Bureau of Weights and Measures at Sèvres, the establishment at which the international prototypes of the metre and the kilogram are preserved.

It is pointed out that the investigations at the Bureau have led to a vast improvement in the constancy and trustworthiness of thermometers and in the measurement of atmospheric pressure, and it is proposed to describe in future issues the instrumental equipment of the Bureau and the metrological work undertaken there. A good portrait is given of Dr. Guillaume, the director of the Bureau, who is to deliver the Guthrie lecture to the Physical Society to-morrow, April 23. In an article on the metric system it is urged that, in addition to teaching the system in schools, the Government should set a lead by adopting it in Departments such as the Post Office, the Ministry of Health, and the Royal Air Force, thus familiarising the public with metric measures and preparing the way for a change which is inevitable. Another feature of the number is an explanation of the advantages of decimal coinage.

A SUMMARY of the weather for the year 1919 has recently been issued by the Meteorological Office. It deals very fully with the annual results of the several elements for numerous representative stations for the several districts of the British Isles. The year was generally dry, and was noteworthy for the heavy snowstorm on April 27-28, and for the exceptionally cold March and November. October, which is normally the wettest month of the year, was in many places the driest. The mean temperature for the year was below the normal in all districts, the deficiency ranging from 1.6° F. in East Scotland to 0.4° F. in the south of Ireland. The earth temperatures were also below the normal, both at 1 ft. and 4 ft. below the surface. Rainfall was in excess in the eastern districts and deficient in the western districts. Sunshine was mostly in excess of the normal except in some of the eastern districts. Data are given showing the warmest day and warmest night, also the coldest day and coldest night, for the several stations of the different districts, and there are similar details for the several months. Monthly frequencies of sunshine for selected stations are shown. Days in the year with rainfall between fixed limits are given for selected stations, and the number of days in the year with certain maximum and minimum temperatures. Many and various particulars of anemograph observations are given, with the frequency of hours with average wind speed, also with a maximum hourly speed. A table shows the frequency of winds of various strengths from different directions for several stations in different parts of the British Isles. Much of the data is in a form which will be available for aviation requirements.

THE February and March issues of the Journal of the Franklin Institute contain the report of the committee—consisting of Messrs. E. P. Hyde, P. W. Cobb, H. M. Johnson, and W. Weniger—of the Nela Research Laboratory which undertook the investigation of the relative merits of monocular and binocular field-glasses under Service conditions. The tests are not yet completed, but already afford a large amount of valuable information. The principal conclusions of the eighty pages of the report are that in the hands

of not very experienced observers the monocular requires to have a magnification of 6.27 in order to give the same results as a binocular of the usual magnification of 6.0. As regards rapidity of production and adjustment, cost, weight, portability, and ease in use the monocular is far ahead of the binocular. The report deserves careful consideration by optical-instrument makers in this country.

In an article in the April issue of *Science Progress* Major A. E. Oxley summarises his work on the magnetic properties of about forty organic compounds between -180° and 200° C., and shows that atomic theories of the Rutherford-Bohr type, which neglect magnetic forces, are incapable of accounting for many of the magnetic properties of matter. How these theories are to be modified he is not yet in a position to say, but his diagram of two atoms held together by electromagnetic forces shows these forces to be due to a pair of oppositely directed circular currents in each atom outside the positive nucleus and rotating electrons. This idea is on the same lines as those put forward recently by Parsons (1915) and Langmuir (1919). The author points out finally that an adequate theory must account for the molecular structure of crystals, and the relations between that structure and their behaviour in the magnetic field must agree with stereochemistry, give the additive property of diamagnetics, and show no dielectric hysteresis. It is to be hoped that the forthcoming discussion on the subject of atomic structure at the Royal Society will throw some light on these difficulties of present theories.

AN important paper on the magnetic characteristics of the iron core of a transformer or of an induction coil by the late Prof. B. Osgood Peirce is published in the Proceedings of the American Academy of Arts and Sciences (vol. 1., No. 7, p. 149). Sixty years ago Helmholtz verified the predictions of the mathematical theory of a transformer. The verification, however, was limited to the case when the inductances of the two coils were constant. With an iron core—the case considered by the author—this assumption is not justified. He first tried the loading coils which are used in long-distance telephony. The cores of these coils are made of iron wire only one-tenth of a millimetre in diameter. The eddy currents induced in the core are therefore negligibly small. Assuming merely the connection between the ampere-turns and the magnetisation and Faraday's law for the electromotive force induced by a change in the magnetic induction, Prof. Peirce found that the experimental results agreed with those deduced from theory to within about the tenth part of 1 per cent., i.e. to within the limits of experimental error. Even with the ordinary closed iron circuit commercial transformer he found that the predictions of theory were verified to high accuracy when the eddy currents in the core could be neglected. It was concluded that a good approximation to the shape of the current curves, to the rate of growth of the excitation, and to the flux of the magnetic induction in the core of a transformer can be obtained when an accurate statical hysteresis diagram of the core over the given range is available.